Appendix D
QUALITY ASSURANCE PROJECT PLAN (QAPP)
Guidance for 319(h) Nonpoint Source Projects

A QAPP is a written document that describes the quality assurance procedures, quality control specifications, and other technical activities that must be implemented to ensure that the results of the project or task to be performed will meet project specifications. A QAPP must be submitted by the grantee and approved by the Department of Environmental Protection (Department) before any water quality sampling can occur through a 319(h) grant.

The following QAPP format is provided to assist 319(h) grantees in developing and packaging the document in order to minimize approval time. Once the draft QAPP is developed, grantees must submit it to the Division of Watershed Management (DWM) project manager in order to begin the review process. The project must be at the appropriate stage of completion, as delineated in the project's approved scope of work, for the draft to be reviewed, i.e., the QAPP can not be submitted until all preliminary tasks are completed. Draft QAPPs submitted prematurely will not be reviewed.

No water quality monitoring shall begin until the QAPP has been approved by the Department. Any sampling done prior to securing an approved QAPP will not be considered within the project's scope of work and the Grantee will not receive financial reimbursement for such sampling.

Please Note:

(1) The Grantee must submit the draft QAPP only at the appropriate stage of the project, that is, when all required tasks, as outlined in the executed contract, which precede sampling are completed and agreed to by the Department.
(2) The Grantee must submit the draft QAPP (without signatures) to the appropriate DWM 319(h) Project Manager.
(3) Once the Grantee has received comments back from the Department, the Grantee shall revise the QAPP to address said comments and submit the final QAPP (with signatures) to the 319(h) Project Manager.
(4) The 319(h) Project Manager will secure all Department signatures and provide the Grantee with an approved QAPP.

Unless otherwise approved by the Department, there shall be no less than eight (8) successful sampling events per sampling location.

For Grantees unfamiliar with QAPP procedures and protocol, a meeting with Department QAPP staff will be coordinated in order to facilitate this process. Please contact your 319(h) Project Manager to make those arrangements.

The 319(h) QAPP guidance was developed based upon USEPA's document entitled "EPA Requirements for Quality Assurance Project Plans, EPA QA/R-5" (EPA/240/B-01/003). This document as well as additional information regarding QAPPs can be found at www.epa.gov/quality/.

QUALITY ASSURANCE PROJECT PLAN (QAPP)
Name of 319(h) Grant
Contract RPF # XXXXXXX

Prepared by: _____ Date:_____

QAPP Preparer

Affiliation

Reviewed by: _____ Date: _____

Preparer's Organization QA/QC Officer (if there is one)

Affiliation

Reviewed by: _____ Date: _____

319(h) Grantee, 319(h) Grantee

Reviewed by: _____ Date:_____

NJDEP Staff, 319(h) Project Manager

Appropriate Bureau

Reviewed by: _____ Date:_____

Helen Rancan, Statewide NPS Coordinator

Bureau of Watershed Planning

Approved by: _____ Date:_____

Marc Ferko, Quality Assurance Officer

Office of Quality Assurance

Names of other organizations involved in project (such as field operations manager, laboratory managers, State, and Federal agency officials, etc.) should be included on this cover sheet as well as the Distribution List.

Chapter Letter _____ Section Number _____
Date_____ Revision Number _____ Page _____ of _____

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Section 3: Distribution List

Individuals and their organizations who need copies of the approved QAPP and any subsequent revisions.

Name	Organization	Address	e-mail
Project Manager			
QA Officer			
Grantee			
319(h) Project Manager	NJDEP – Division of Watershed Management Bureau of Watershed Planning	401 E. State Street, P.O. Box 418, Trenton, NJ 08625-0418	Fname.Lname@dep.state.nj.us
Helen Rancan	NJDEP – Division of Watershed Management Bureau of Watershed	401 E. State Street, P.O. Box 418, Trenton, NJ 08625-0418	Helen.Rancan@dep.state.nj.us
Marc Ferco	NJDEP – Office of Quality Assurance	PO Box 424 9 Ewing Street, 2nd Flr. Trenton, NJ 08625-0424	Marc.Ferco@dep.state.nj.us

Section 4: Project/Task Organization

Identify individuals or organizations involved in the project and discuss their specific roles and responsibilities. Include the principal data users, the decision makers, the project QA manager, and all persons responsible for implementation. Provide a concise organization chart showing the relationships and the lines of communication among all project participants.

Section 5: PROBLEM DEFINITION/BACKGROUND

State the specific problem to be solved, decision to be made, or outcome to be achieved, include the source and cause of impairments (from 303(d) list) known problems, conflicts or threats (from experience or other studies) and known efforts to address (from experience or other studies).

In Appendix A include Attachment D (approved scope of work) from the executed contract.

Section 6: **PROJECT/TASK DESCRIPTION**

Describe all work to be performed, products to be produced and the schedule for implementation needed to resolve the problem described in Section 5. **Maps and tables that show and state the geographic locations of field tasks must be provided.**

Section 7: Quality Objectives and Criteria

Describe quality objectives and performance criteria to achieve those objectives.

Section 8: Training Requirements and Certification

Identify and describe any specialized training/certifications needed by personnel in order to successfully complete the project. Discuss the training will be provided and how the necessary skills will be assured and documented.

Section 9: Documentation and Records

Describe the process and responsibilities for ensuring the appropriate project personnel have the most current approved version of the QAPP, including version control, updates, distribution and disposition.

Itemize the information and records which must be included in the data report package and specify the reporting format for hard copy and any electronic forms. Records can include raw data, data from other sources such as databases or literature, field logs, sample preparation and analysis logs, instrument printouts, model input and output files, and results of calibration and QC checks.

Identify any other records and documents applicable to the project that will be produced, such as audit reports, interim progress reports, and final reports. Specify the level of detail of the field sampling, laboratory analysis, literature or database collection, or modeling documents or records needed to provide a complete description of any difficulties encountered.

Specify or reference all applicable requirements for the final disposition of records and documents, including location and length of retention period.

Section 10: Sampling Process Design

Table 10 Sampling Frequency, Period and Time of Day

Measure(s) or Indicator(s)	Sites	Brief Description of Location	Type of Site	Frequency	Type of Sample Collected	Time of Day Sampled	Special Weather Conditions
e.g.: pH, alkalinity, DO				***8***			
e.g.:Benthic macroinvert-ebrates				***8***			

Section 11: Sampling Method Requirements

Table. (Section 11) Sampling locations and sampling methods.

Sampling Location	Location ID Number	Matrix	Depth (units)	Analytical Parameter	# Samples (include field duplicates)	Sampling SOP #	Sample Volume	Containers #, size, type	Preservation (chemical, temperature, light protected)	Maximum Holding Time: Preparation/ analysis

Section 12: Sample Handling and Custody Procedures

Describe how samples should be handled, transported, and then received in the laboratory or office. Include how handling and custody is documented--through field notebooks or forms, etc--and identify responsible personnel. For parameters measured in this project, provide information on container, volume, initial preservation, and holding times in the table below. Identify chain of custody procedure. Form may be attached.

Table. (Section 12). Sample handling and custody

Parameter	Container	Volume	Initial Preservation	Holding Time

Section 13: Analytical Methods Requirements

Provide reference to the analytical procedures, including field measurements and laboratory that will be used in the study.

Table. (Section 13) Field and Laboratory analytical methods

Analyte	*Laboratory / Organization*	*Project Action Limit (units, wet or dry weight)*	*Project Quantitation Limit (units, wet or dry weight)*	*Analytical Method*		*Achievable Laboratory Limits*	
				Analytical Method/ SOP	*Modified for Method yes/no*	*MDLs*	*Method*
e.g. pH	**Field:** monitoring by field staff	6 - 9 pH units	NA	Standard Methods (*) 4500H+B FDCC Field SOP 1	None		
e.g. Total coliform and E. coli	**Lab:** In-house laboratory	< 20 MPN/100mL for E. coliforms	2 MPN/100mL	Standard Methods 9223B Enzyme substrate method	None	Not applicable	2 MPN/100 mL

(*) Standard Methods for the Examination of Water and Wastewater, *20th edition.*

Section 14: Quality Control Requirements

Provide description of QC activities for this project

Table. (Section 14) Sampling (Field) QC

Matrix:	
Sampling SOP:	
Analytical Parameter(s):	
Analytical Method/SOP Reference:	
# Sample locations:	

Field QC	***Frequency/Number per sampling event***	***Acceptance Limits***
Equipment Blanks		
Field Blanks		
Trip Blanks		
Cooler Temperature		
Field Duplicate Pairs		
Collocated Samples		
Field Splits		
Field Matrix Spikes		
Other:		

Table. (Section 14) Analytical QC.

Matrix:	
Sampling SOP:	
Analytical Parameter(s):	
Analytical Method/SOP Reference:	
# Sample locations:	

Laboratory QC	***Frequency/Number***	***Acceptance Limits***
Method Blank		
Reagent Blank		
Storage Blank		
Instrument Blank		
Lab. Duplicate		
Lab. Matrix Spike		
Matrix Spike Duplicate		
Lab. Control sample		
Surrogates		
Internal Standards		
Others:		

Section 15: Instrument/Equipment Testing, Inspection and Maintenance Requirements

List equipment and provide testing, inspection and maintenance information in narrative form or in table below. Information such as availability/location of spare parts, corrective action should be identified only if these items are not addressed in the SOP.

Table. (Section15) Testing, inspection, maintenance of sampling equipment and analytical instruments

Equipment / Instrument	*Maintenance Activity, Testing Activity or Inspection Activity*	*Responsible Person*	*Frequency*	*SOP Reference*

Section 16 Instrument/Equipment Calibration and Frequency

Table. (Section 16) Testing, inspection, maintenance of sampling equipment and analytical instruments

Equipment / Instrument	*SOP reference*	*Calibration Description and Criteria*	*Frequency of Calibration*	*Responsible Person*

Section 17 Inspection/Acceptance Requirements

Provide a list of project supplies (e.g. standard materials and solutions, sample bottles, nets and reagents and consumables) that may directly or indirectly affect the quality of the results, specify criteria for acceptance, and identify persons responsible. Provide the information in narrative form or use table below.

Table. (Section 17) Inspection/acceptance testing requirements for consumables and supplies

Project-Related Supplies / Consumables	*Inspection / Testing Specifications*	*Acceptance Criteria*	*Frequency*	*Responsible Individual*

Section 18: Data Acquisition Requirements

Provide information on data that will be obtained from existing data sources. Include how the types of data mentioned will be used and its relevance to the project. Describe the measures of data quality that you will use to judge whether the data are acceptable for their intended use. Identify any types of data your project uses that are not obtained through your monitoring activities. Examples include historical information, information from topo maps or aerial photos, or reports from other monitoring groups.

Section 19: Data Management

Trace the path the data take, from field collection and lab analysis to data storage and use. Discuss how accuracy and completeness of field and lab forms will be checked, and how to minimize and correct errors in calculations, data entry to forms and databases, and report writing. Provide examples of forms and checklists. Identify the computer hardware and software that will be used to manage the data. Include the process for assuring that applicable EPA information resource management requirements are satisfied (see EPA Directive 2100). Other EPA standards may apply; all must be satisfied and described in the plan.

Section 20 Assessment and Response Actions

Describe the project assessments planned including type of assessment, frequency and number of assessments and approximate time periods. Also identify individual(s) responsible for conducting assessments. Describe the scope of authority that the reviewer has, and who has the authority to issue a stop-work order. Describe how and to whom assessment information should be reported. Describe process for corrective action. Include how actions are to be addressed, by whom, and how they are verified and documented.

Section 21: Reports

Identify all interim and final reports, including project QA status reports, which will be written during the project term. Identify frequency of reporting, responsible individuals, and report recipients. Information may be provided in narrative or tabular form below:

Table. (Section 21) QA management reports

Type of Report	*Frequency (daily, weekly, monthly, quarterly, annually, etc.)*	*Projected Delivery Dates(s)*	*Person(s) Responsible for Report Preparation*	*Report Recipients*

Section 22: Data Review, Verification and Validation

Describe the criteria for deciding to accept, reject, or qualify project data in an objective and consistent manner. If applicable, include any subsequent activities and criteria that will review data a second time for data that fails to pass the first review. Procedures are to be discussed in the next element.

Section 23: Validation and Validation Methods

Provide a description of how the project data will be verified and validated. Describe the process to show how errors will be handled and this information given to the data users. Reference and attach any necessary forms and checklists to the QAPP. Identify the individuals to be involved in these efforts. Describe how any issues will be resolved and identify who has the authority for resolving them. Describe how results will be conveyed to data users. Attach copies of the applicable SOPs, checklists, forms, and calculations to be used in an appendix to the QAPP.

Section 24: Reconciliation with Data Quality Objectives

Describe how the results will be evaluated to determine whether the project's objectives have been satisfied. This assures that the data has already met all data quality objectives and other quality issues. The outcome is whether the data does or does not support the original hypothesis or whether the data is not robust enough to make the determination. Describe proposed methods (statistical or scientific) to analyze the data so as to determine possible anomalies or departures from assumptions made when the project was planned. Statistical analyses may include tests for outliers, trends and dispersions. Describe how limitations in data use will be reported to the data users.